NEW AUSTRALIAN RECORDS OF ASIAN OR NEW ZEALAND PHLAEOTHRIPIDAE (THYSANOPTERA)

LAURENCE A. MOUND[1] and LI-HONG DANG[2, 3]

[1]*CSIRO Ecosystems Sciences, PO Box 1700 Canberra, ACT 2601 (Email: laurence.mound@csiro.au)*

[2]*Key Laboratory of Zoological Systematics and Evolution, Institute of Zoology, Chinese Academy of Sciences, No. 1 Beichen West Road, Chaoyang District, Beijing 100101, P.R.China*

[3]*University of Chinese Academy of Sciences, No. 19, Yuquan Road, Shijingshan District, Beijing 100049, P.R.China*

Abstract

Three species of Phlaeothripidae described from Southeast Asia and two species described from New Zealand are here recorded from Australia. Three genera, *Anaglyptothrips* Mound & Palmer, *Azaleothrips* Ananthakrishnan and *Yarnkothrips* Mound & Walker, should be added to the Australian faunal list.

Introduction

The Thysanoptera fauna of Australia, in addition to several large endemic radiations on plants such as *Acacia* and *Casuarina* (Mound 2004), includes in the north of this continent a considerable number of taxa that are essentially Asian, whereas in the south several taxa are shared with New Zealand. The increasing recognition of the Asian tropical element in this fauna has been referred to in recent papers (Mound 2004, Mound and Tree 2007, 2009, 2011), as has the New Zealand connection (Mound 2006, Mound and Walker 2012).

The purpose of this paper is to record from Australia five further species of Phlaeothripidae, two known from New Zealand and three from tropical Asia, and thus to add to the Australian faunal list the following three genera: *Anaglyptothrips* Mound & Palmer, *Azaleothrips* Ananthakrishnan and *Yarnkothrips* Mound & Walker. Full nomenclatural details of these taxa are web-available (ThripsWiki 2013). Slide-mounted specimens of the species listed here are in the Australian National Insect Collection, Canberra, with others in the Queensland Primary Industries Insect Collection, Brisbane.

Anaglyptothrips dugdalei Mound & Palmer

Anaglyptothrips dugdalei Mound & Palmer, 1983: 35.

A member of the subfamily Idolothripinae, in which all species are presumed to feed on fungal spores, the genus *Anaglyptothrips* includes only this species. It was described from near Auckland, New Zealand, collected from introduced grasses, but one female has recently been collected near Nelligen in southeastern New South Wales and two females have been studied from southeastern Queensland (Tree and Walter 2012). Among the Idolothripinae recorded from Australia (Mound 1974), this genus shares only with *Gastrothrips* Hood the condition of having three sensoria on the fourth antennal segment. In contrast to members of that genus, it is a yellow,

wingless species with the body surface sculptured with strong reticulation and no long setae. The head, illustrated by Mound and Walker (1986: 92), has the compound eyes small but bulbous with each having fewer than 12 ommatidia.

Specimens studied. QUEENSLAND: 1 ♀, Brisbane, Gap Creek Reserve, in *Acacia* leaf-litter, 8.i.2009 (DJ Tree); 1 ♀, Gap Creek Reserve, in *Acacia* leaf-litter, 24.xii.2008 (DJ Tree). NEW SOUTH WALES: 1 ♀, Nelligen, from grass by stream, 24.i.2013 (L-H Dang).

Pygothrips vicinus Okajima

Pygothrips vicinus Okajima, 1990: 97.

The Idolothripinae genus *Pygothrips* Hood includes 17 species and is found throughout tropical countries, feeding on fungal spores on dead branches. In the type species of the genus, *P. rugicauda* Hood from northern Queensland, abdominal segment ten, *i.e.* the tube, is greatly swollen with strongly convex margins (Mound 1974). Several species from other countries, plus some undescribed species from Australia, have the tube similarly swollen, but this is an extreme condition amongst a series of species that are included in this genus. Several species have the tube less swollen, although with the margins more strongly convex than the straight-sided tube that is typical of most Phlaeothripidae. The species here newly recorded from Australia, *P. vicinus*, has the tube with convex margins. Okajima (1990) described and illustrated this species from the Ryukyu Islands of southern Japan and also recorded it from Thailand and Java. The Australian specimens listed below have been compared with paratypes of *P. vicinus* from Okinawa and, despite having slightly shorter postocular setae, are considered to represent that species.

New record. QUEENSLAND (Torres Strait): 4 ♀♀, Horn Island, from base of dead *Dianella*, 20.xi.2009 (AC Postle).

Azaleothrips lepidus Okajima

Azaleothrips lepidus Okajima, 1978: 386.

Ten species have been placed in the genus *Azaleothrips*, all from tropical Asia. These thrips are members of the Phlaeothripinae and all live on dead branches, feeding on fungi. The surface of the head and thorax is covered with complex sculpture that involves irregular markings within each sculptured reticle. *Azaleothrips lepidus* is known previously only from Thailand and the specimen listed below is identified from the original description and illustrations (Okajima 1978). However, this is a member of a group of four described species that have been distinguished from each other only by slight differences in the colour of the pronotum and legs, and the lengths of the postocular setae on the head. One of these, *A. amabilis* Ananthakrishnan, is recorded widely across India (Ananthakrishnan and Sen 1980) but remains poorly defined, while *A. bhattii* Vijay Veer & Chauhan is based on a single sample from northern India. In contrast, although the

descriptions and illustrations of *A. lepidus* and *A. siamensis* Okajima are well prepared and based on good samples, these two species were collected together in Thailand from the same sample of dead leaves and there is some overlap in the character states used to distinguish them. In structure these four species are very similar to each other and the possibility exists that they may represent a single, widespread species on dead leaves and branches.

New record. NORTHERN TERRITORY: 1 ♀, Cobourg Peninsula, Smith Point, from dead twigs, 14.v.1999 (LAM 3698).

Strepterothrips orientalis Ananthakrishnan

Strepterothrips orientalis Ananthakrishnan, 1964: 118.

The genus *Strepterothrips* Hood currently includes nine species from various parts of the tropics and Mound and Ward (1971) provided a key to the six species then known. One of these species, *S. tuberculatus* (Girault), is one of the most common and widespread Phlaeothripinae in Australia, having been taken widely across the continent, fungus-feeding on dead branches. *Strepterothrips orientalis* was described from India, subsequently recorded from Thailand and included in the key to species by Mound and Ward (1971). It differs from the other members of the genus in having antennal segments two and three bright yellow, in contrast to the dark brown colour of the rest of the heavily sculptured body. Moreover, the third antennal segment is unusually short, being as wide as long, and bears only one sensorium, with three sensoria on the fourth segment. Members of this genus are highly polymorphic, generally wingless but with rare winged females. Males vary greatly in body size with large males having a greatly produced ventral hamus on the fore tarsus that looks like a tarsal claw, as illustrated by Okajima (1995). For several years *S. orientalis* has been known to be widespread across northern Australia, but previously the species had not been formally recorded.

New records. QUEENSLAND: 1 ♀, Townsville, 16.vii.1995; 1 ♀, Townsville, 23.viii.2004; 3 ♀♀, 1 ♂, Torres Strait, Boigu Island, from dead wood, 16.xi.2009; 1 ♀, Darnley Island, 17.xi.2009; 1 ♂, Warraber Island, 19.xi.2009. NORTHERN TERRITORY: 1 ♀, Coburg Peninsula, Smith Point, from dead twigs, 14.v.1999. WESTERN AUSTRALIA: 6 ♀♀, 1 ♂, 20 km south of Broome, from dead mango branch, 1.iii.2005; 1 ♀, Broome, 28.vii.1997; 2 ♀♀, 1 ♂, larvae, Kununurra 23.ii.2005, 4 ♀♀, 1 ♂, Kununurra, 27.ix.2009.

Yarnkothrips kolourus Mound & Walker

Yarnkothrips kolourus Mound & Walker, 1986: 83.

Described from various coastal regions of New Zealand, this is the only species placed in this genus. The fore tarsus has a small hook-shaped tooth distally on the inner margin. However, this arises from the ventral apical margin of the tarsus and is thus a hamus, and is not homologous with a typical fore tarsal tooth that arises laterally. Illustrated by Mound and Walker

(1986), the maxillary bridge within the head is curiously arched, antennal segment three bears three sensoria and the terminal setae on the abdominal tube are exceptionally short. The relationships of this genus within the Phlaeothripinae remain in doubt. The species is likely to be predatory on other small arthropods, with adults varying considerably in body size. Specimens have been collected recently from several localities other than New Zealand, as indicated below.

New records. AUSTRALIAN CAPITAL TERRITORY: 2 ♀♀, from dead *Eucalyptus*, Namadji, 18.iii.2006; 1 ♀, Black Mt., 7.x.2011; 1 ♀, Oakey Hill, 5.iii.2011. NEW SOUTH WALES: 1 ♀, Dalmeny, 26.xii.2010. QUEENSLAND: 1 ♂, Stanthorpe, from dead wood, 28.xii.2011; 1 ♀, 1 ♂, Brisbane, from bark spray, 27.vi.2011; 1 ♀, 2 ♂♂, Brisbane, from bark spray, rainforest, 22.i.2011. TASMANIA: 1 ♀, Flinders Island, 27.xi.2011. NORFOLK ISLAND: 1 ♀, 2 ♂♂, 21-26.xii.2012. NEW CALEDONIA: 1 ♂, La Foa, from dead *Ocimum* stems, 5.iv.2012.

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